Post-og teletilsynet
Norwegian Post and Telecommunications Authority

Annex 1

Analysis of the markets for voice call termination on individual mobile networks (Market 7)

Case 1206565
1 December 2014

Summary

This is the sixth analysis that the Norwegian Post and Telecommunications Authority's (NPT) has performed of the markets for voice call termination on individual mobile networks (Market 7). NPT has previously analysed these markets in 2005, 2007, 2008, 2010 and 2011.

The market analysis will provide the basis for applying sector-specific measures in markets in which undertakings with significant market power (SMP) are identified.

Chapter 1 contains a description of the background and framework for the analysis.

In chapter 2 the relevant product markets are defined. In its Recommendation on relevant markets, the EFTA Surveillance Authority (ESA) has defined the relevant product markets as voice call termination on individual mobile networks. NPT regards the relevant markets under Norwegian conditions as corresponding to the Recommendation. No sufficient substitution possibilities exist, on either the demand or the supply sides that make it relevant to broaden the product markets. NPT assumes that voice call termination on 2G networks, 3G networks and virtual mobile networks are included in the product markets[1].

As regards the geographic definition of the markets, NPT has concluded that they correspond to the individual mobile networks' respective footprints in Norway, including coverage achieved through national roaming agreements, MVNO (Mobile Virtual Network Operator) agreements or similar.

On the basis of the market definition NPT defines the following markets:

- Voice call termination on Com4's mobile network
- Voice call termination on Lyca's mobile network
- Voice call termination on Network Norway's mobile network
- Voice call termination on TDC's mobile network
- Voice call termination on Telenor's mobile network
- Voice call termination on Tele2's mobile network
- Voice call termination on TeliaSonera's[2] mobile network
- Voice call termination on Ventelo's mobile network

[1] At the time of the analysis, voice call termination on LTE networks does not exist as a product and is therefore not included in the market definition. If it should become relevant within the time-frame of the analysis, NPT will perform a specific assessment of whether voice call termination on LTE networks should be included.

[2] TeliaSonera Norge AS was formally established in January 2011 and operates the brands NetCom and Chess. See: https://netcom.no/om-teliasonera

Chapter 3 contains NPT's analysis of whether there are undertakings with significant market power in the relevant markets. In NPT's assessment the most relevant criteria for analysing significant market power in these markets are *market share, entry barriers and potential competition*, and *countervailing buying power*[3]. This means that NPT has not assessed all the criteria required by the Guidelines. In NPT's opinion, inclusion of the omitted criteria would not have changed the outcome of the analysis.

Com4, Lyca, Network Norway, TDC, Telenor, Tele2, TeliaSonera and Ventelo are each the only provider of voice termination services on their respective mobile networks / virtual mobile networks, which correspond to the relevant markets. They therefore all have a 100 per cent market share. Because the entry barriers within the individual relevant markets are absolute, there is no potential competition within the time horizon of the analysis.

There is therefore a presumption that all six providers have significant market power throughout the entire period covered by the analysis. However, the provider will not have significant market power if there are weighty factors that have a disciplinary effect on the providers' exercise of market power. These factors are assumed primarily to relate to countervailing buying power. NPT cannot see that there are buyers with enough bargaining power to have a disciplinary effect on the setting of termination charges by Com4, Lyca, Network Norway, TDC, Telenor, Tele2, TeliaSonera or Ventelo.

In view of this, NPT has found that Com4, Lyca, Network Norway, TDC, Telenor, Tele2, TeliaSonera and Ventelo have significant market power in their respective markets for voice call termination on individual mobile networks.

[3] This report uses the concepts "countervailing buying power" and "buyer power" synonymously.

Contents

1 Introduction

1.1 Background and framework for the analysis

1. The regulatory framework for electronic communication is based on five directives adopted by the European Union (EU)[4]. These directives entered into force for Norway on 1 November 2004. The directives have been implemented in Norwegian law through the Electronic Communications Act and appurtenant regulations.

2. The framework shall lay the foundation for the harmonisation of regulation in the EEA area, limit entry barriers and facilitate sustainable competition to the benefit of the users.

3. It follows from Norway's obligations under the EEA Agreement that identification of undertakings with significant market power is to be carried out in accordance with the guidelines and recommendations prepared by ESA under the new Framework Directive for electronic communications services:

- Guidelines on market analysis and assessment of significant market power (hereinafter referred to as "the Guidelines")[5]
- Recommendation on relevant markets (hereinafter referred to as the "Recommendation")[6]

4. According to the Guidelines, an assessment of relevant markets and significant market power must be based on a market analysis. The assessment is to accord with competition law methodology. The Guidelines and the Recommendation, together with the provisions of the Act on Electronic Communications, particularly sections 3-1 to 3-3, will therefore form the legal framework for the market analysis.

5. The Electronic Communications Act's definition of significant market power in section 3-1 reads:

> *"A provider has significant market power when the provider individually or jointly with others has economic strength in a relevant market affording the provider the power to behave to an appreciable extent independently of competitors, customers and consumers. Significant market power in one market may result in a provider having significant market power in a closely related market."*

6. The term "significant market power" in the Electronic Communications Act is very close to the competition law standard "dominance".

7. In the document "Methodology for market analysis" (the methodology document) NPT has elaborated on the Guidelines' criteria for market analysis on a number of points. The methodology document is not legally binding, but expresses NPT's understanding of the guidelines to which NPT is obliged to adhere. The market analyses will therefore be

[4] Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services (Framework Directive); Directive 2002/20/EC on the authorisation of electronic communications networks and services (Authorisation Directive); Directive 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive); Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive); Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications).

[5] EFTA Surveillance Authority Guidelines 14/07/2004.

[6] EFTA Surveillance Authority Recommendation 05/11/2008 with the Commission's Explanatory Note.

undertaken in accordance with the views and assessments expressed in the methodology document. Should there prove to be discrepancies between the methodology document and the Guidelines or the Recommendation, the Guidelines or the Recommendation will take precedence. The methodology document is updated as the Guidelines and the Recommendation are amended. This analysis is based on the methodology document dated 11 June 2009.

8. The market analysis work may be divided naturally into three phases:

1. Define relevant markets by defining relevant product markets and defining geographic markets.

2. Carry out market analyses of each of the relevant markets with a view to uncovering whether any undertakings have significant market power.

3. Impose obligations on undertakings designated as having significant market power.

9. This analysis contains NPT's assessments for the first two phases.

10. The market analysis is an annex to the draft decisions in which NPT notifies specific obligations[7] for those providers considered to have significant market power. Pursuant to section 3-4 of the Electronic Communications Act and Norway's obligations under the EEA Agreement, NPT is obliged to impose at least one specific obligation on an undertaking with significant market power.

11. The market analyses will be subject to regular review and therefore have a limited forward-looking time horizon, cf. paragraph 20 of the Guidelines. This analysis has a time horizon of two to three years.

1.2 Previous market analyses and decisions in the markets for termination on mobile networks

12. This is NPT's sixth analysis of the markets for voice call termination on individual public mobile networks. The markets are referred to in the analysis as the markets for voice call termination on mobile networks.

13. The first three analyses were based on the ESA Recommendation on relevant markets from 2004, while the analyses from 2010 and 2011 were based on the ESA Recommendation from 2008. In the 2004 Recommendation the market for voice call termination was designated as Market 16. The market is retained in the ESA Recommendation from 5 November 2008, but is now referred to as Market 7. The definition of the market is unchanged.

14. On 9 October 2014, the European Commission adopted a new recommendation[8] on relevant markets. Wholesale markets for voice call termination on mobile networks remain susceptible for ex-ante regulation, referred to as market 2. ESA is expected to take a similar view, but until such recommendation is in place the ESA recommendation from 5th November 2008 is valid in Norway and NPT referrers to the relevant markets as market 7.

15. The previous analyses are dated 19 September 2005, 8 May 2007, 17 November 2008, 27 September 2010 and 15 June 2011. The last analysis was a supplementary analysis of

[7] Cf. chapter 4 of the Electronic Communications Act.

[8] COMMISSION RECOMMENDATION of 9.10.2014 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services.

Lycamobile Norway Ltd., which established itself as a provider of termination after the 2010 analysis had been conducted. The table below provides an overview of NPT's decisions and providers that have been designated as having significant market power:

NPT's decisions	Operators designated as having significant market power
19 September 2005	Telenor ASA, Teletopia Mobile Communications AS, Tele2 Norge AS, TeliaSonera Norge AS[9].
8 May 2007	MTU Networks AS[10], TDC AS[11], Telenor ASA, Tele2 Norge AS, TeliaSonera Norge AS.
17 November 2008	Barablu Mobile Norway Ltd., Network Norway AS, MTU Networks AS, TDC AS, Tele2 Norge AS, Ventelo AS.
27 September 2010	Network Norway AS, TDC AS, Telenor ASA, Tele2 Norge AS. TeliaSonera Norge AS, Ventelo AS.
15 June 2011	Lycamobile Norway Ltd.

Table 1: Operators with significant market power in the markets for voice call termination on mobile networks

2 Market definition

2.1 Market definition – general

16. As stated above, in connection with the market analyses NPT shall assess whether the markets predefined by ESA are suitable for Norwegian circumstances. In addition the product market must be described and defined and the geographic market defined. The relevant markets are to be defined in accordance with the principles of competition law.

2.1.1 The product market

17. A relevant product market comprises products or services (the terms are used interchangeably below without any difference in meaning) that are sufficiently substitutable. The starting point for the definition of a relevant product market is an assessment of demand-side substitutability. However, substitutability may also exist on the supply side, and may then be relevant in the definition of the relevant market.

[9] At the time of the decision TeliaSonera was formally called NetCom. TeliaSonera Norge AS operates the brands NetCom and Chess.
[10] Teletopia Mobile Communications AS was acquired by MTU Networks AS at the beginning of 2007. MTU Gruppen petitioned for bankruptcy at the end of November 2007.
[11] Its formal name in the decision of 8 May 2007 was TDC Song AS.

18. Demand-side substitutability exists when two or more products in the market are, in the perception of the end user, mutually exchangeable or substitutable on the basis of characteristics, price and area of utilisation.

19. Supply-side substitutability exists when providers of other (non-substitutable) products, as a response to a marginal price change in the short term, can change their production or distribution and offer substitutable products without incurring significant additional costs or substantial risk.

20. An acknowledged method of analysing substitutability is the so-called "hypothetical monopolist test" (SSNIP test)[12], which attempts to find the best-defined market in which a hypothetical monopolist can exercise market power. This test assesses the effect of a small, but significant (in practice 5–10 per cent) and non-transitory increase in the price of the relevant product, based on the assumed price level in a market with effective competition. All other prices are assumed to be unchanged. The effect of the price increase in the relevant market and the overall effect on the producer's revenues are then assessed. The key point of the SSNIP test is to assess the effect of the relative price increase on revenues of the relevant product with a view to establishing whether the price increase will be profitable for the hypothetical monopolist.

21. The Recommendation does not make use of the SSNIP test an absolute requirement in the market definition. Similar methods may therefore also be used. Regardless of method, the hypothetical assessment should be supplemented by factual information about behaviour on the supply and demand sides to the extent that such information is available. On the demand side, factors such as the end users' access to information, the costs of changing and other lock-in mechanisms should be taken into consideration. On the supply side, account should be taken of the actual opportunities a provider has to change production as well as any regulatory conditions that prevent rapid market entry by competitors in the market.

2.1.2 The geographic market

22. Once the relevant product markets are determined, the geographic market is defined. In accordance with the Guidelines, paragraph 57, the geographic market may be defined as that area in which the relevant product is offered on virtually equal and sufficiently homogeneous conditions of competition.

23. However, it follows from paragraph 60 of the Guidelines that geographic markets in the electronic communications sector have traditionally been determined by reference to the relevant network's area of coverage as well as the effective boundaries (jurisdiction) of the legal regulation of the market.

24. NPT can only define regional or national markets. The jurisdiction for defining transnational markets is vested with ESA.

25. It might make sense in the case of some product markets to divide them into geographic markets that are smaller than the nation-state, since there are local providers of electronic communications services covered by the relevant product market, or to identify local variations in the competitive conditions.

26. The European Regulators Group (ERG)[13] published the "Common Position on Geographic Aspects of Market Analysis (definition and remedies)"[14] (ERG CP) in October

[12] "Small but Significant Non-transitory Increase in Price". See the Guidelines, paragraph 40.

[13] In 2010 ERG was replaced by the Body of European Regulators for Electronic Communications (BEREC).

[14] http://www.irg.eu/streaming/ERG%20(08)%2020%20final%20CP%20Geog%20Aspects%20081016.pdf?contentId=545387&field=ATTACHED_FILE

2008. In this document ERG describes the recommended process for geographic definition of the market.

27. In section 2.2.3 NPT assesses whether there is a need for a more detailed geographic analysis of the Norwegian markets for voice call termination on mobile networks in the light of ERG CP.

2.2 Definition of the markets for voice call termination on mobile networks

2.2.1 Product definition in the Recommendation

28. The definition of the markets for voice call termination on mobile networks was not changed in the ESA Recommendation of 2008. Nor did the Recommendation entail any significant changes to the guidelines issued by the Commission for the definition of this market in the Explanatory Note[15]. In this section NPT summarises the main guidelines for defining the relevant product market.

29. In the Explanatory Note the Commission takes as its starting point the fact that voice call termination on mobile networks is an input factor for calls originating on both fixed and mobile networks. Furthermore, the Commission emphasises the market failure in the termination markets as a result of the "calling party pays' (CPP) principle. According to this principle, only the party placing the call (the calling party) pays for the call. Because the termination charge is set by the owners of the network receiving the call (the terminating operator), the calling party has little or no ability to influence the termination charge. The CPP principle is currently the norm in all European countries.

30. With regard to substitutability at the retail level the Commission points out that a call to a particular end user is not substitutable with a call to another end user. For an end user to be able to reach a particular end user on another mobile network, the originating operator has no choice other than to terminate the call on the mobile network to which the end user in question is connected. For that reason, demand at the wholesale level is derived directly from demand at the retail level.

31. Regarding supply-side substitutability, the Commission points out that given the current technology, no real possibilities exist for other providers to offer substitutable services that can impose discipline on a competitor so that it does not raise its termination charges. The Commission points out further that in practice it is impossible for a provider to price discriminate among termination to various end users on the same network. The Commission therefore finds that the scope of the relevant market is at least as extensive as termination on each operator's network.

32. Since the operator and product are perfectly linked, the Commission discusses whether other forms of communication could represent real substitutes on the supply and demand sides, respectively. In that case this might represent a de facto limitation on the ability of providers to set termination charges regardless of customers, competitors and consumers. However, the Commission concludes that other forms of communication do not currently represent full substitutes, on either the demand or the supply side. To the extent substitutes exist on the demand side, such as calls to a fixed-line telephone or use of SMS, these alternative forms of communication do not appear to be able to impose discipline on the pricing

[15] On 17 December 2007 the Commission approved the revised Recommendation of relevant markets with a new Explanatory Note. ESA has not written a corresponding Explanatory Note for its Recommendation, but refers to the Commission's Explanatory Note.

of termination. Although the Commission points out that termination of voice calls and termination of SMS messages share the same market characteristics, the Commission nevertheless holds that demand- and supply-side substitution means that SMS termination constitutes a separate market from voice call termination.

33. The Commission then concludes that the relevant market under a CPP regime is voice call termination on individual mobile networks. One consequence of the definition is that all mobile operators are monopoly providers of termination on their own mobile networks. However, it was pointed out that it is still not a given that the providers will have significant market power. This will depend on an assessment of whether there is buyer power that can sufficiently discipline the market power.

2.2.2 Definition of the Norwegian product markets

34. In the market analysis for the decision of 8 May 2007, NPT performed a relatively extensive assessment of substitutability on the demand and supply sides based on Norwegian market conditions. In that assessment the Authority concluded that the relevant Norwegian product markets coincided with the Recommendation. In subsequent analyses of Market 7 NPT has reached the same conclusion. As stated above, the market definition in the Recommendation from 2008 is unchanged from the definition from the 2004 Recommendation. NPT regards the market and technological conditions related to termination as largely unchanged from the previous analyses, and refers here to the assessment in the aforementioned market analysis from 2007.

35. These assessments of product market definition entail that termination of SMS messages is not included in the market definition for termination of voice calls on mobile networks[16]. NPT maintains that from an end-user perspective it cannot be claimed that there is sufficient substitutability between voice calls and SMS messages, for a variety of reasons. For the end user a call entails instant, two-way communication. By contrast communication via SMS can be delayed in that the recipient is free to choose when to read the message. Indeed the sender can never even be 100 per cent certain that the message will reach the recipient.

36. On the wholesale level there are both contractual and technical differences between voice call termination and SMS termination, entailing that SMS is not included in the market for termination of voice calls. Whereas termination of voice calls is charged per minute, termination of SMS is charged per unit. Technically there is also the possibility that SMS, which unlike voice calls does not depend on real-time processing, can be transported on the network in a way that allows delays.

37. The assessments indicate further that voice call termination on 2G networks, 3G networks and virtual mobile networks are included in the product markets[17]. The end users do not notice if the call is terminated on a 2G or 3G network, and the termination charges are expected to be identical regardless of technology, as has been the case to date.

38. In terms of termination of voice calls on the LTE network, it is NPT's understanding that this is not in principle included in the product market. NPT assumes that initially IP-based LTE networks will be used for data traffic. Norwegian operators do not currently offer voice calls on LTE networks. However, NPT is aware of work to develop various technologies that will enable provision of voice calls over LTE networks in the future. In principle, the voice call termination market is technologically neutral, but if the technology used has significance for the product's functionality, quality or price, this may be important for the market definition. In the event of changes in the technological developments and the services on offer, NPT will, as necessary,

[16] See section 2.3.6.2 in Annex 1 to NPT's decision of 8 May 2007.

[17] See section 2.3.6.3 in Annex 1 to NPT's decision of 8 May 2007.

undertake a specific assessment of whether LTE nevertheless ought to be included in the product market.

39. In line with the conclusion of previous analyses, NPT holds that termination of voice calls on a virtual mobile network operator (MVNO)'s network is to be included in the product markets. Providers with an MVNO agreement offer end-to-end communication to their own retail customers, but without having their own frequencies or radio network. MVNOs lease access to radio capacity from providers who own their own radio network. An MVNO has a 100 per cent market share in its own virtual network, enters into special interconnection agreements with other providers, and, like network owners, controls the right to terminate voice telephony with their end users. For the sake of clarity, NPT would point out that the inclusion of termination with MVNOs (mobile virtual network operators) and on 3G networks is a clarification and not an expansion of ESA's market definition.

40. NPT also upholds the reasoning and conclusions in the above-mentioned market analysis that traffic terminating as machine-to-machine traffic (M2M) shall be included in the product market definition. Although voice calls are expected to account for only a very minor share of the M2M traffic, such applications cannot be ruled out.

41. The number series 58x and 59x have been reserved for M2M traffic and will be used for automated or semi-automated communication services for voice calls or data traffic. Both number series have been set aside for M2M communication to relieve the ordinary number series for mobile communication (4x and 9x). From 1 July 2010 it has not been permitted to produce new SIM cards for M2M in the 4x and 9x series. However, it is still possible to use these series for existing M2M applications.

42. While there is not considered to be demand-side substitutability between ordinary voice services and M2M communication, the situation is different on the supply side. Providers of voice termination services on mobile networks will be fully able to offer termination to SIM cards used in M2M communication without substantial adjustment costs. The numbering plan does not distinguish between M2M applications with and without voice, nor is there any distinction within the 4x and 9x series between ordinary mobile subscriptions (with voice) and M2M subscriptions (with or without voice). Supply-side substitution thus suggests that time-charged traffic for M2M subscriptions should be included in the markets.

43. With regard to termination on mobile providers' voice mail services, NPT upholds the reasoning and conclusion that the service is a part of the relevant product market, primarily because the voice mail service is an integral part of the mobile subscription and that for practical reasons it is not possible to separate this service from it.

2.2.3 Definition of the Norwegian geographic markets

44. In the previous market analyses of voice call termination on mobile networks NPT concluded that the geographic market is to be defined nationally and to the extent of each individual provider's network, independent of country of origination.

45. The fact that the product markets are defined as termination on individual mobile networks functions per se as a geographic definition. In NPT's view, the geographic market definition should be based on the area where the providers in question control the termination charges and where the market conditions are sufficiently homogeneous. The mobile networks used for termination are geographically limited to Norway. Moreover, the geographic scope of the Electronic Communications Act is limited to Norway.

46. In accordance with section 1-3 of the Electronic Communications Act, cf. Regulation no. 882 of 4 July 2003, the Electronic Communications Act applies to Svalbard, Jan Mayen, the dependencies and Antarctica. In respect of Svalbard, exemptions have been made for chapter 3 (significant market power), chapter 4 (access) and section 9-3 (consultation procedure). However, electronic communications on Jan Mayen, the dependencies and Antarctica are

assumed to have very little significance for the market analyses NPT carries out pursuant to the Electronic Communications Act.

47. As mentioned in section 2.1.2, according to ERG CP, a hypothetical monopolist test should be performed to ascertain whether a more detailed geographic analysis for the market definition is needed. The relevant question is then whether a marginal, but non-transitory increase in price (5–10 per cent) in an area means that a sufficient number of end users will move to a different area or whether providers from other areas will start to offer the product in the relevant area in response to the price increase, so that it would not be profitable. Since the termination charges for mobile telephony are the same throughout the country and, mobile customers naturally move around, dividing the relevant market into several market segments cannot be justified. As mentioned, the CPP principle also means that providers' end users have little incentive to influence the price by moving in the event of a marginal, but non-transitory increase in price.

48. The market and competitive conditions must be characterised as homogeneous throughout the country. Both Telenor's and TeliaSonera's networks have virtually nationwide coverage. Providers with national roaming or MVNO access agreements achieve similar coverage through their agreements. Thus, all providers of termination services offer termination in practically all of Norway.

49. With regard to the quality of the call termination product it is not possible to separate service providers or areas from one another. Furthermore, the charges for termination on mobile networks are, as mentioned above, also independent of where in the country the subscriber happens to be.

50. In NPT's opinion, there are not different competitive conditions in stable and clearly defined parts of the country to indicate that a geographic division of the market is necessary. For this reason NPT finds that further analysis of the question of whether the market shall be divided geographically is unnecessary, and a national approach to market definition and analysis is still well documented.

2.2.4 Overview of the markets and operators

51. Mobile providers that technically and financially control access to terminate voice telephony with end users are undertakings in the relevant market.

52. In all, roughly 5.5 billion minutes (excluding internal traffic) were terminated on Norwegian mobile networks during 2013. The corresponding figure for 2012, 2011 and 2010 is roughly 5.3 billion minutes. Figure 1 shows the breakdown of terminated call minutes among the providers that control termination based on the figures for 2013. Telecom statistics for first half of 2014[18] indicates that there are no significant changes in traffic volume and traffic distribution.

[18] http://www.npt.no/marked/ekomtjenester/statistikk/det-norske-ekommarkedet-rapporter

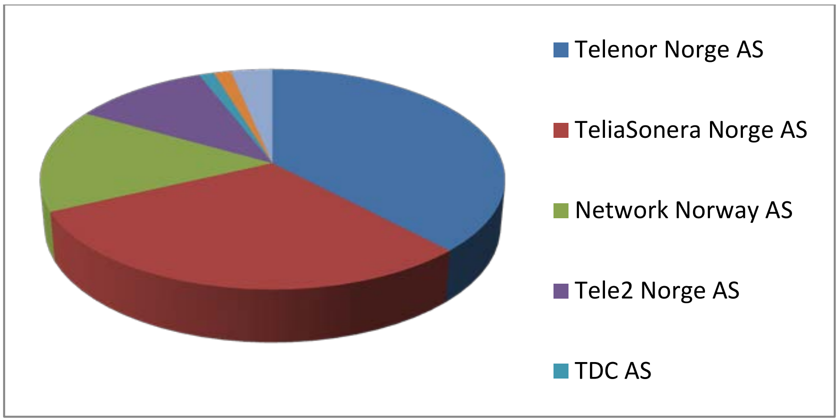

Figure 1: Share of terminated minutes that originated externally.

53. For 2013, revenues from voice call termination on mobile networks account for a total of approximately NOK 0.9 billion. Revenues for 2012 were NOK 1.7 billion, for 2011 approximately NOK 2.2 billion, and for 2010 approximately NOK 3.3 billion. Regulated price reductions have resulted in decreased total revenues even though the traffic level has increased slightly. Asymmetrical termination charges until the end of 2012 have resulted in the share of the revenues exceeding the share of the traffic for some of the companies that have benefited from higher termination charges than the others. From 1 January 2013, however, regulated termination charges have been symmetrical so that the distribution of the revenue from termination reflects the share of the traffic.

54. Telenor and TeliaSonera are established mobile providers with both radio and core networks. The companies' GSM networks (2G) and UMTS networks (3G) are virtually nationwide in terms of population coverage. Both Telenor and TeliaSonera have launched commercial data subscriptions services on the LTE network (4G)[19], and considerable work is being done to develop this network technology. Both companies have entered into interconnection agreements with other providers and through these agreements offer voice call termination on their own mobile network.

55. Like Telenor and TeliaSonera, Network Norway and Tele2 have both a radio network and a core network through their infrastructure company Mobile Norway AS (Mobile Norway)[20]. Mobile Norway's network is mainly based on 3G, and at the end of 2013 the company had achieved roughly 75 per cent population coverage. The company has thus fulfilled the obligations arising from asymmetric termination charges. As a result of Mobile Norway not winning spectrum in the auction held 2 December 2013[21] they were initially supposed to give up the frequency resources in the 900 MHz band from 1 October 2014. The company has however made an agreement with Ice.net to rent a 5 MHz block up until April 2015. For the part of its services not produced on its own network, Tele2 purchased national roaming from TeliaSonera until 1 July 2014, while Network Norway purchased national roaming from Telenor. From 1 July 2014, the companies joined forces on their purchase of national roaming access from Telenor. Network Norway and Tele2 have entered into separate interconnection agreements with other providers, and both operators are thus providers of termination on their own mobile network.

[19] These companies offer packaged retail products with 4G data traffic and 3G voice and SMS.
[20] Tele2 AB (the Swedish parent company of Tele2 Norway AS) controls Mobile Norway as a result of the acquisition of Network Norway. The network being built by Mobile Norway is therefore referred to as Tele2's network.
[21] http://www.npt.no/teknisk/frekvensauksjoner/auksjoner/planlagte-avsluttede/auksjon-14-790-862-mhz

56. In July 2014 TeliaSonera announced that it has entered into an agreement to purchase Tele2's Norwegian operations. This merger is currently being considered by the Norwegian Competition Authority. This acquisition may affect Network Norway and Tele2's status as providers of voice call termination on mobile networks. For the time being, however, the companies' termination services are being continued, and NPT therefore continues to regard Network Norway and Tele2 as providers of voice call termination on mobile networks and has included them in this analysis.

57. Com4, Lyca, TDC and Ventelo offer voice call termination based on MVNO access agreements. MVNOs have their own core network, switching network and associated support systems, and their own mobile network code (MNC). However, MVNOs do not have their own spectrum resources or radio network; rather they enter into agreements with undertakings that own their own network for access to the radio portion of this network. An MVNO will conclude separate interconnection agreements with other undertakings in the same manner as ordinary mobile providers, thereby controlling the right to terminate voice telephony with their end users. Com4's core business focuses on provision of machine-to-machine communication (M2M). However, the company has relatively recently entered into a number of interconnection agreements and is in negotiations for interconnection with several operators. Termination of voice call is included in these agreements and contract negotiations.

58. Ice.net currently provides mobile data communications (mobile broadband) based on rolling out its own network using CDMA technology under the brand name ice.net. The company does not currently provide voice telephony and thus does not provide voice call termination on its own mobile network either. As a result of the frequency auction in December 2013 Ice.net also gained access to frequencies in the 800 and 900 MHz bands, but it is not yet clear how these frequencies will be used and what services will be offered. Ice.net and its current operations thus fall outside the relevant market in this analysis at the current time.

59. In addition there are around 15 other providers in the Norwegian mobile market that have entered into service provider agreements with a network owner or MVNO. These agreements grant the right to offer, market and deliver services to end users through pre-paid cards or subscriptions. The end user has a purely contractual relationship to the service provider. All traffic is routed according to the net operator's interconnection agreements with others. The service providers thus do not control voice call termination and are thus omitted from the further analysis.

2.2.5 Conclusion of market definition

60. In NPT's opinion the relevant markets cover the following:

- Voice call termination on Com4's mobile network
- Voice call termination on Lyca's mobile network
- Voice call termination on Network Norway's mobile network
- Voice call termination on TDC's mobile network
- Voice call termination on Telenor's mobile network
- Voice call termination on Tele2's mobile network
- Voice call termination on TeliaSonera's mobile network
- Voice call termination on Ventelo's mobile network

61. The individual market covers voice call termination on both GSM and UMTS networks. In addition the markets include termination on voice mail services. Time-metered traffic to mobile-based M2M subscriptions in the 4x, 58x, 59x and 9x number series are included in the market.

In geographic terms the market for voice call termination on mobile networks shall be defined as the individual mobile networks' respective footprints in Norway, including coverage achieved via national roaming or MVNO access agreements. Norway is understood to mean mainland Norway, i.e. the Norwegian land territory, cf. the definition in section 2.2.3.

3 Analysis of the markets

3.1 General – significant market power

62. The assessments that are used to designate providers with significant market power shall, according to paragraph 76 of the Guidelines, be based on a forward-looking market analysis on the basis of existing market conditions.

63. NPT emphasises that the relevant subject of assessment is the existence of significant market power and not anti-competitive abuse of market dominance. For the assessment of significant market power it is thus not crucial whether any market power or dominance is actually abused or not. A provider's behaviour in the market will nevertheless be relevant to the assessment of significant market power. Even if structural factors are accorded the greatest weight in the assessment, behaviour that helps create or maintain competitive advantages may justify the conclusion of significant market power.

64. The analysis of significant market power is based on the Guidelines and NPT's methodology document. The providers' *market share* forms the basis of the analysis. Then NPT assesses *prices and price developments, entry barriers* and *potential competition* as well as *countervailing buying power (buyer power)*. In NPT's view, the remaining criteria specified in the Guidelines provide little or no information that is essential for the assessment of significant market power in the relevant termination markets. For that reason the analysis does not include a discussion of these criteria.

65. Significant market power may be held by one provider alone (single dominance) or together with others (collective dominance). However, for the markets concerned, the issue of collective dominance is irrelevant, since there is only one undertaking in each market.

3.2 Market shares

66. A natural starting point for analyses of significant market power is to assess market share, cf. paragraph 76 of the Guidelines. ESA points out that the Commission assumes that single dominance will normally be found in providers with a market share of 40 per cent or more and that it is only in exceptional cases that a market share of more than 50 per cent does not imply dominance. ESA writes:

> *"According to established case-law, very large market shares – in excess of 50 per cent – are in themselves, save in exceptional circumstances, evidence of the existence of a dominant position. An undertaking with a large market share may be presumed to have SMP, that is to be in a dominant position, if its market share has remained stable over time."*

67. Market share can be measured by revenue, volume or number of customers. Characteristics of the relevant market will be decisive for the choice of market share measurement, cf. the Guidelines, paragraphs 77 and 78.

68. It follows from the definition of the markets for voice call termination on mobile networks that there is only one provider in the individual market. Thus, regardless of the criteria used to measure market share, each mobile provider has a 100 per cent market share in its respective market. Consequently Com4, Lyca, Network Norway, TDC, Telenor, Tele2, TeliaSonera and Ventelo all have a monopoly on voice call termination on their own network.

69. The companies' market shares in the relevant markets are 100 per cent and thus far higher than the thresholds specified by the ESA and the Commission for there to be a presumption of significant market power.

70. It follows from paragraph 79 of the Guidelines that the identification of significant market power must not be based solely on market share; rather it must be viewed in context with the other relevant assessment criteria. In the following, NPT considers prices and price developments, entry barriers and potential competition as well as buyer power.

3.3 Prices and price developments

71. Price levels and price developments over time can often indicate the degree of competition in a market, or the degree of potential competition, and can thereby provide an indication of whether a provider has market power. However, in the markets for call termination on mobile networks, it follows from the definition that each market consists solely of a single undertaking. All the providers of voice call termination on mobile networks have been subject to price controls. Price developments have thus largely been dictated by these price controls, meaning this information is of limited value for the assessment of market conditions.

72. The figure below shows termination charges from 1 January 2007 up to and including the rate reductions implemented on 1 January 2013 pursuant to NPT's decisions of 27 September 2010 and 15 June 2011 and the Ministry of Transport and Communications' decision of 11 May 2011.

Service provider	1 Jan. 2007	1 Oct. 2007	1 July 2008	1 Feb. 2009	1 July 2009	1 July 2010	1 Jan. 2011	1 July 2011	1 Jan. 2012	1 July 2012	1 Jan. 2013
Telenor	0.65	0.6	0.6	0.6	0.5	0.5	0.3	0.3	0.3	0.2	0.16
TeliaSonera	0.91	0.7	0.6	0.6	0.5	0.5	0.3	0.3	0.3	0.2	0.16
TDC	1.16	1.16	1.16	1	0.9	0.75	0.4	0.3	0.3	0.2	0.16
Ventelo	1.16	1.16	1.16	1	0.9	0.75	0.4	0.3	0.3	0.2	0.16
Mundio Mobile	1.61	1.61	1.61	1	0.9	0.75					
Lyca								0.3	0.3	0.2	0.16
Tele2	1.16	1.16	1.16	1	1	0.9	0.65	0.5	0.4	0.25	0.16
Network Norway	1.16	1.16	1.16	1	1	0.9	0.9	0.8	0.7	0.6	0.16

Table 2: Price developments for mobile termination charges from 1 January 2007 to 1 January 2013. The rates are per minute when any call set-up charges are included.

73. As shown in the figure above, neither Network Norway, Tele2 nor the other providers have chosen to follow Telenor and TeliaSonera's gradual reduction of termination charges until they themselves were subject to regulation. Such a pricing strategy would not be possible over time in a market with competition. If there were competition in providing a uniform commodity like termination, the providers would have to be at virtually the same price level to be able to

sell their product. The price development shown in the figure above thus indicates that the providers do not face competition in the termination markets and that there are not sufficiently disciplinary mechanisms for price setting.

3.4 Entry barriers and potential competition

74. Potential competition from new operators may affect a dominant operator's behaviour in the market, including in connection with price setting. Various forms of entry barriers may, however, weaken or remove the basis for potential competition.[22]

75. The relevant markets are defined as voice call termination in the individual providers' physical or virtual mobile networks. Given the current technology it is not possible for parties other than the undertaking controlling this mobile network to provide termination to its own customers on the network in question. For that reason, within the time horizon of the analysis of two to three years it appears to be impossible for other providers to enter the respective termination markets. In such a market, the entry barriers will therefore be absolute, and there is thus no potential competition. Therefore NPT does not find it necessary to carry out a more detailed assessment of entry barriers such as sunk costs and economies of scale.

76. Assuming that there nevertheless was competition in the termination markets, this would be reduced as a result of the Calling Party Pays principle[23] (CPP). This principle enables the operator with high termination charges to subsidise its own customers' calls with revenues from termination. Thus, the end users of the operator with the high termination rates will not have an incentive to change provider.

77. Absolute entry barriers, and thus the absence of potential competition within the time horizon of the analysis, indicate that Com4, Lyca, Network Norway, TDC, Telenor, Tele2, TeliaSonera and Ventelo have significant market power in their respective markets for termination.

3.5 Buyer power / countervailing buying power[24]

3.5.1 General comments on buyer power

78. Buyer power[25] is a factor that may indicate that, contrary to expectations, providers of termination services on mobile networks do not actually have significant market power. It is stated in the comments to the Commission's Recommendation[26] from 2007 that:

> *"A market definition for call termination on each mobile network would imply that currently each mobile network operator is a single supplier on each market. However, whether every operator then has market power still depends on whether there is any countervailing buying power, which would render any non-transitory price increase unprofitable."*

[22] In paragraph 81 of the Guidelines, ESA writes the following about entry barriers: "In fact, the absence of barriers to entry deters, in principle, independent anti-competitive behaviour by an undertaking with a significant market share."

[23] The calling party pays principle entails that the subscriber placing the call also pays for it.

[24] The criterion corresponds to "absence of, or low countervailing buying power" in paragraph 79 of the Guidelines.

[25] The terms "countervailing buying power" and "buyer power" are used interchangeably without any intended difference in meaning.

[26] Cf. Explanatory Note, page 44.

79. NPT believes that buyer power exists when a defined buyer or group of buyers is sufficiently important to the seller to be able to exercise influence on the price that the seller takes for the goods or service. Thus, exercising buyer power in the individual markets for voice call termination on mobile networks will mean that buyers of termination are able to have an impact on the monopolists' determination of their own termination charges.

80. However, in assessing buyer power in connection with significant market power it is not enough to ascertain that undertakings that demand the termination service potentially have some buyer power or that the undertaking has actually exercised buyer power. The question in this context is whether the seller of termination is subject to buyer power to such a degree that the buyer power provides a basis for departing from the presumption that the seller may act independently of competitors, customers and consumers. This issue is discussed in what follows as a question of whether the buyer power is sufficiently effective.

81. Buyer power is deemed to be sufficiently effective if it is able to generate virtually the same outcome that could be expected in a market characterised by competition. This means, among other things, that the operator is prevented from having termination charges that are substantially higher than the price that could be expected in a competitive market.

82. Providers of termination services are in a reciprocal relationship in that they act as buyers and sellers of termination in one another's networks. Profits from the call termination product will thus depend on the difference between revenue from termination on the operator's own network and expenses for termination on other operators' networks. For that reason, a reduction of termination charges by one seller of termination may provide a reason for the buyers of termination to reduce their own termination charges. Termination charges that are higher than a cost-oriented price and the price that would have been achieved in a functioning market, indicate that the buying power is not sufficiently effective. A decrease in others' termination charges that is not reflected in a provider's own termination charges may also be an indication that the buying power is not sufficiently effective.

83. Buyer power is not an absolute concept, but refers to the relative strength a buyer has in bargaining with a seller for a given good or service. Thus, the degree of buyer power will vary according to the particular constellation of buyers and sellers.

84. Some factors generally serve to reduce the providers' ability to exercise buyer power in the markets for voice call termination on mobile networks. These factors include:

- If the buyer of access is able to cover his needs in a way other than by buying from the seller, including the possibility of reducing or refraining from purchasing.
- The regulatory context in which any buyer power is exercised, including any specific obligations, as well as the parties' expectations of the outcome of bringing any disputes on interconnection agreements to NPT for resolution.

85. NPT has considered factors that generally serve to reduce the ability to exercise buyer power in Annex 1 to the decision dated 27 September 2010, and finds that the assessments there are still valid. Reference is therefore made to that decision for an assessment of these factors. In the following chapter NPT examines factors that are pertinent to determine whether any of the companies covered by this analysis are exposed to buyer power that is regarded as being sufficiently effective.

3.5.2 NPT's assessment of whether the specific providers are exposed to buyer power

86. In the analyses in 2010 and 2011 NPT has discussed whether there are factors that on an individual basis indicate that the companies covered by these analysis were exposed to buyer power. NPT concluded that the buyer power that the analysed providers were subject to was not sufficient to change the presumption that the providers were able to act independently of the market. In NPT's opinion, there is no specific evidence to suggest that the previous

conclusions about buyer power should be amended. Against this backdrop NPT deems it sufficient to undertake a limited individual assessment of buyer power.

87. In addition to the factors mentioned in the previous section, buyer power may be exercised on the basis of:

- The buyer's importance to the seller by virtue of the buyer's purchase volume.
- Whether the buyer can offer something of interest to the seller, such as access to other markets.

88. The buyers of voice call termination on mobile networks consist of other fixed network providers and mobile providers. The largest buyer in Norway is Telenor, which in addition to buying termination for its own mobile and fixed network customers, also acts as a supplier of transit services for other mobile and fixed network providers.

89. Negotiations on interconnection ordinarily take place bilaterally between the service providers. In view of Telenor's role as the largest buyer of termination on Norwegian mobile networks, NPT finds that the company is best positioned to exercise buyer power. The fact that Telenor produces services that are necessary inputs for the other providers' production of services is assumed to further support this.

90. NPT finds it appropriate to use Telenor's ability to exercise buyer power as a starting point. To the extent that the analysis shows that the company would not be in a position to discipline the analysed providers' termination charges, it is assumed that the other buyers of termination would also not be in a position to exercise buyer power that provides a basis for deviating from the presumption that the company has significant market power.

91. Normally it can be expected that smaller undertakings will be more vulnerable to pressure in negotiations than larger operators. However, the minor operators' relatively low traffic volume means that the charges that the minor operators set have a relatively small impact on the larger operators' interconnection costs, and may pull in the opposite direction. Thus it may be assumed that Telenor and TeliaSonera's incentive to exercise buyer power is greater vis-à-vis Network Norway and Tele2, but that its ability to exercise buyer power is greater vis-à-vis Com4, Lyca, TDC and Ventelo respectively.

92. The termination charges of all the providers included in this analysis, with the exception of Com4, are subject to price controls in the form of a price cap. As part of its assessment of buyer power, NPT will choose a "modified greenfield approach", namely disregarding the obligations in the market that is the subject of the market analysis. A starting point for assessment of buyer power could be how the companies used to set their termination charges before the companies were subjected to price cap regulation. Most of the companies covered by this analysis have, however, been subject to price cap regulation for some time now. Nevertheless, price caps will not prevent any buyer power from driving prices down to a level below the price cap. In this light NPT finds it most relevant to consider the providers' behaviour after the price controls were imposed.

93. Until 2013 Network Norway and Tele2 benefited from asymmetric price controls and thus had a significantly higher proportion of the termination revenues than they did of the terminated minutes. The relatively high costs that Telenor and TeliaSonera have had from purchasing termination from Network Norway and Tele2 have boosted the companies' incentives to try to exercise their buyer power. Similarly Telenor and TeliaSonera's positions as sellers of access can give these companies the opportunity to exercise buyer power over buyers of access. Nevertheless, NPT has not found empirical evidence that Telenor and TeliaSonera have actually succeeded in exercising buyer power in a way that has forced Network Norway and Tele2 to reduce their termination charges.

94. As regards TDC and Ventelo, NPT notes that before the companies' termination charges were subjected to price cap regulation, these companies set their termination charges at a level that was significantly higher than Telenor's and TeliaSonera's. NPT believes that the price level was also substantially above the rates the undertakings could expect to attain in a market with functioning competition. None of these providers reduced their termination charges beyond what was required by the regulation, which imposed falling prices, and therefore not because Telenor and TeliaSonera implemented several mandatory price reductions in the period between 2007 and 2011. In NPT's opinion, these factors indicate that the buyer power the companies are exposed to has an insufficiently disciplinary effect on the providers' setting of their own termination charges.

95. Lyca launched end-user services based on MVNO access from TeliaSonera in April 2010. From its entry into the market Lyca has set termination charges that are identical to those of the other MVNOs[27], i.e. higher than the rates charged by Telenor and TeliaSonera, but no higher than the price cap of the other MVNOs. NPT believes that this, seen in isolation, may indicate that the company is exposed to buyer power. NPT also finds it reasonable to assume that Lyca was familiar with NPT regulation towards symmetrical prices for all mobile providers and that Lyca's knowledge of the price controls has had a disciplining effect on its pricing. On this basis NPT's overall assessment is that Lyca's pricing shows that the company, without price controls, has both the incentive and the opportunity to set prices that exceed the rates that it could expect to attain in a market with functioning competition.

96. Com4 entered into an access agreement as an MVNO with TeliaSonera in December 2012 and in May 2013 launched its machine-to-machine communications (M2M) services. At mid-2014 Com4 was about to enter into interconnection agreements with the other operators and had set a termination charge that matched the regulated price cap of NOK 0.16. In line with NPT's assessment of Lyca's pricing, NPT finds that Com4 is aware of the symmetrical price controls and that it is reasonable to assume that this has influenced its setting of termination charges. At the same time there is a potential for monopoly pricing from Com4 in the same way as from the other providers of termination.

97. NPT expects that Telenor and TeliaSonera will have a certain ability to achieve lower rates by exerting bargaining pressure on minor operators such as Com4, Lyca, TDC and Ventelo. This is because by virtue of their MVNO agreements, these companies are in a dependency relationship with Telenor and TeliaSonera on account of the need for favourable access charges. On the other hand, these operators have the opportunity to change MVNO provider. However, such a switch would entail transaction costs and a potential for loss of customers, weakening this alternative in a negotiation situation.

98. Even if Telenor and TeliaSonera could each actually successfully negotiate lower termination rates with their buyers of access, this does not necessary mean that other operators that depend on buying termination would be able to achieve the same result. As part of their MVNO agreements with Telenor both Ventelo and TDC have, in periods with asymmetric termination charges, agreed to accept lower termination charges for traffic coming from Telenor's mobile network than for traffic originating on other networks. Nevertheless TDC and Ventelo's termination charges vis-à-vis other operators in the market were higher than the prices Telenor and TeliaSonera charged at the time. Thus, it does not appear that any buyer power that Telenor or TeliaSonera may have in this area will benefit other buyers of termination. For that reason, such buyer power is unlikely to push the general price level of a provider downwards, only the rate that the seller of access itself has to pay. In view of this, NPT believes that any buyer power that either Telenor or TeliaSonera may have is insufficient

[27] With the exception of Tele2 (which used to have an MVNO agreement with TeliaSonera), which had a higher termination rate because of the company's roll-out of a third mobile network in Norway.

to depart from the presumption of significant market power in the individual termination markets of the companies in question.

99. Nor has NPT found any reason to change its conclusion that neither Telenor nor TeliaSonera is exposed to buying power that is sufficiently effective to change the presumption that these operators have significant market power. After introduction of price cap regulation both companies have set termination charges that are equal to the price cap.

3.5.3 Summary of buyer power

100. A lack of alternative providers and ability to ensure end-to-end connectivity through interconnection obligations serve to severely curtail opportunities to exercise buyer power vis-à-vis sellers of voice call termination on mobile networks.

101. There are signs that some of the smaller operators have been subjected to a certain degree of buyer power. However, NPT believes that none of the companies have been subjected to a degree of buyer power that would justify abandoning the presumption that the undertakings can behave independently of customers, competitors and consumers in the markets for voice call termination on their own mobile networks. Neither Telenor nor TeliaSonera has been exposed to sufficiently disciplining buying power in their respective termination markets.

102. As explained above, the key question is whether the companies concerned are exposed to buyer power that can discipline the companies' termination charges to the level they could expect in a market characterised by competition. NPT believes that the price levels at which the different companies have placed themselves, especially before they were subject to a price cap, but also afterwards, clearly show that this is not the case. On the contrary, in NPT's opinion the price level set shows that without price controls the providers have both the incentives and the ability to set rates that are higher than they could have done in a market with functioning competition.

103. Consequently, NPT's conclusion is that the buyer power the analysed providers are exposed to is not sufficiently effective to warrant abandoning the presumption that the providers have significant market power in the markets for call termination on their own mobile networks.

3.6 Conclusion – single dominance

104. Com4, Lyca, Network Norway, TDC, Telenor, Tele2, TeliaSonera and Ventelo are each the only provider of voice termination services on their respective mobile networks, which correspond to the relevant markets. Thus each has a 100 per cent market share. The assessment of price developments for voice call termination also shows that the providers do not have an incentive to voluntarily reduce their termination charges to a level corresponding to a market with competition. The entry barriers within the individual relevant markets are absolute, meaning there is no potential competition within the time horizon of the analysis. As a starting point, all providers will therefore stand to have significant market power. There would have to be compelling factors with a disciplinary impact on market power for this not to be the case. Such factors can primarily be assumed to be associated with buyer power or countervailing buying power.

105. Nor, as shown in the discussion above, can NPT see that countervailing buying power will be able to sufficiently curtail the providers' exercising of market power for call termination on their own networks.

106. In view of this, NPT has concluded that Com4, Lyca, Network Norway, TDC, Telenor, Tele2, TeliaSonera and Ventelo have significant market power in their respective markets for voice call termination on individual mobile networks.